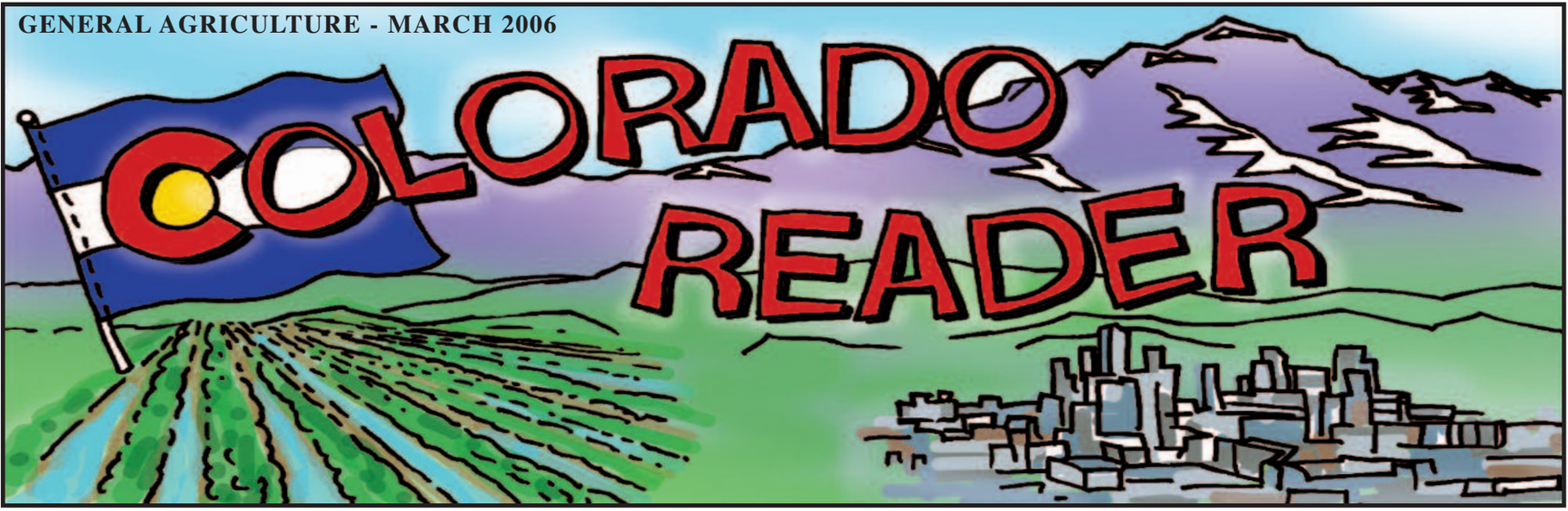


AG IN THE CLASSROOM - HELPING THE NEXT GENERATION UNDERSTAND THEIR CONNECTION TO AGRICULTURE

SUNFLOWERS

It's easy to guess where the sunflower got its name – the sun of course! Its bright yellow petals remind many people of rays of sunshine. Native to the Great Plains of North America, there are more than 60 species of sunflowers. Long before the pilgrims landed at Plymouth Rock, Native Americans grew them for the seeds that were eaten. Flour was also made from the seeds. They boiled and crushed the seeds to make sunflower oil. This oil was used for hair conditioner, in cooking and even for softening leather. No part of the plant was wasted. The flower petals were used for yellow dye, and the fiber from the stalks was used for weaving fabric.

In the early 1600s explorers brought the sunflower back with them to Europe. Before you know it, sunflowers spread around the world. Today, it is an important crop in Hungary, Russia, Egypt, Turkey, India, Peru and Canada.

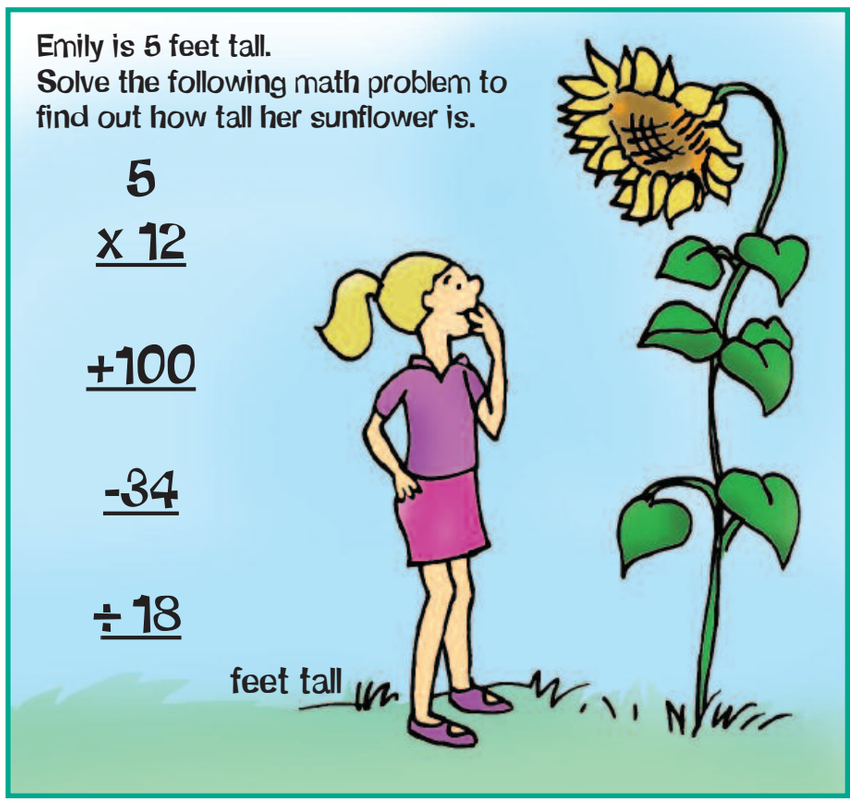
When farmed, the common sunflower is one of the largest annual plants. Its stem grows up to 15 feet tall and the roots can be up to nine feet deep. The head may be 20 inches across and produce 5,000 or more seeds.

There are 2 types of sunflowers – striped and black. Striped sunflower seeds are salted and roasted and make a healthy snack for people. Birds like them plain. Black seeds are mostly used for making sunflower oil for cooking and salad dressing. It's healthier than olive oil.We also use sunflower seeds for livestock and poultry feed. In addition, they are used for making soap. Sunflowers are the fifth largest oil seed crop in the world.

Sunflowers are planted during May in Colorado. They grow quickly, and as they grow they turn their heads to face the sun. They are drought-tolerant, meaning that they don't require as much water as some other crops. Colorado's production of sunflowers ranks fourth in the nation.

Sunflower seeds are rich in nutrients. They contain high levels of protein, iron, vitamin E, some B vitamins, zinc, magnesium, copper, fiber, folate and other nutrients. Some of these nutrients can help protect us from disease.

Sunflower seeds are a healthy choice in salads, desserts, casseroles, snacks and bread. Or you can sprinkle them on your pasta, soup or yogurt.



Agriculture In Colorado

When many people think of Colorado, they think of outdoor fun in the Rocky Mountains. But there's much more to Colorado than recreation. Nearly half of Colorado's 66 million acres are farms and ranches, and Colorado agricultural businesses contribute about $16 billion to Colorado's economy every year.

Are you hungry for a juicy steak? Colorado has plenty. With more than 12,000 beef producers, the cattle industry brings in the most money from agriculture – $3.3 billion.

Love a baked potato with your steak or french fries with your hamburger? Ranked fifth nationally in production of potatoes, Colorado produces nearly three billion pounds of potatoes each year.

Having steamed veggies or salad for dinner? Colorado is the nation's third largest carrot producing state and the nation's third largest lettuce producer.

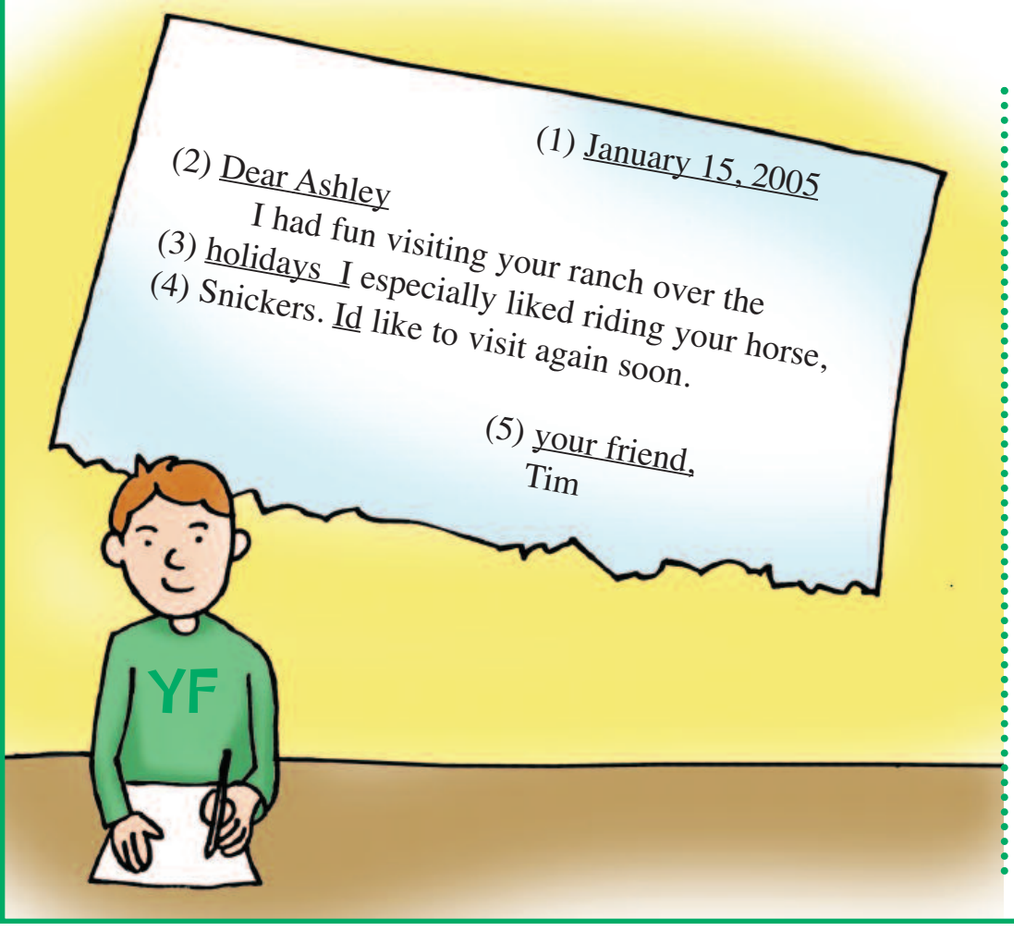
Colorado agriculture is more than just food. Farmers and ranchers help create products used in construction, manufacturing, health care, education, transportation and personal care. Some of these items include:

- X-ray film
- bandages
- crayons
- paper
- piano keys
- footballs
- shoes
- plastic
- tires
- soap
- insulation
- perfume

Agriculture also helps feed the nation and the world. It also provides wildlife habitat, protects the environment and fuels the state economy.

Adapted from
Colorado Agriculture from A to Z
Colorado Department of Agriculture

Read the letter below that Tim wrote to his friend, Ashley. Look at the numbered, underlined parts. Choose the answer that shows the best capitalization and punctuation for each part.



(1)
- ❑ january 15 2005
- ❑ January 15 2005
- ❑ january 15, 2005
- ❑ correct as is

(2)
- ❑ Dear ashley
- ❑ Dear Ashley,
- ❑ dear ashley,
- ❑ correct as is

(3)
- ❑ holidays. I
- ❑ holidays i
- ❑ holidays, i
- ❑ correct as is

(4)
- ❑ Id'
- ❑ I'd
- ❑ 'Id
- ❑ correct as is

(5)
- ❑ Your friend,
- ❑ your Friend,
- ❑ Your Friend
- ❑ correct as is

The *Colorado Reader* publication and "Ag in the Classroom" are projects of the Colorado Foundation for Agriculture. Educational projects are produced in cooperation with the Colorado Department of Agriculture, other state and federal agencies, Colorado commodity groups, Colorado agricultural associations, state universities and colleges and interested individuals. *Colorado Readers* are provided free to educators requesting them. For more information contact: Bette Blinde, Director, Colorado Foundation for Agriculture, P.O. Box 10, Livermore, CO 80536 or phone (970) 881-2902. Financial support for this reader has been graciously provided by The Colorado Sunflower Administrative Committee, The Colorado Agricultural Development Authority, Arickaree Young Farmers, Brush Young Farmers, Fort Morgan Young Farmers Foundation, Front Range Young Farmers, Ignacio Young Farmers, NJC Young Farmers, St. Vrain Young Farmers, Thompson Valley Young Farmers, Yuma Young Farmers and Colorado Young Farmers State Association. Written, Illustrated and Designed by Carrie Jordan, Edited by Bette Blinde

2004 - A RECORD SETTING YEAR FOR YIELDS

In Colorado, 2004 was a record year in yield per acre for barley, onions and sugar beets. This means that more of each of these crops was raised on an acre of land than in the past. Farmers did a good job of raising these crops. The land was more productive than previous years because it had more moisture. Winter snows, spring and summer rains helped the crops. Let's take a closer look at each of these Colorado crops.

BARLEY

Barley is a member of the grass family. It is the fifth largest cereal crop farmed in the world. There are many different kinds of barley. Some barley is used as feed for cattle, hogs and chickens. The stem or straw is also used as a building material and in the production of paper. Barley is also eaten by people and used in bread, cookies, muffins, pancakes and soup. It has a slightly nutty taste. Malting barley is a type of barley that is used for brewing beer and whiskey. It is also used as birdseed.

Barley is nutritious and a good source of fiber, protein, complex carbohydrates, B-vitamins and minerals such as chromium. It is also good at lowering cholesterol levels.

ONIONS

Onions have been cultivated for more than 5,000 years. At least 175 countries grow onions. In addition to eating onions, Native Americans used them to make dye and even as toys. Colorado ranks as fourth in the United States with production of 451,550,000 pounds valued at $55 million in 2004. They represent the largest fresh vegetable crop in Colorado (almost 50%). Onions provide flavor in many foods we eat including pizza, sandwiches, wraps, onion rings, casseroles, soups, stews, salads and Mexican food. Onions are a good source of nutrients such as vitamin C, potassium, vitamin B6, fiber, folic acid, calcium and iron. They are also a good source of antioxidants that help reduce the risk of certain diseases.

Onions range in size from less than one inch to more than 4 1/2 inches. They are found in three colors: white, yellow and purple.

SUGAR BEETS

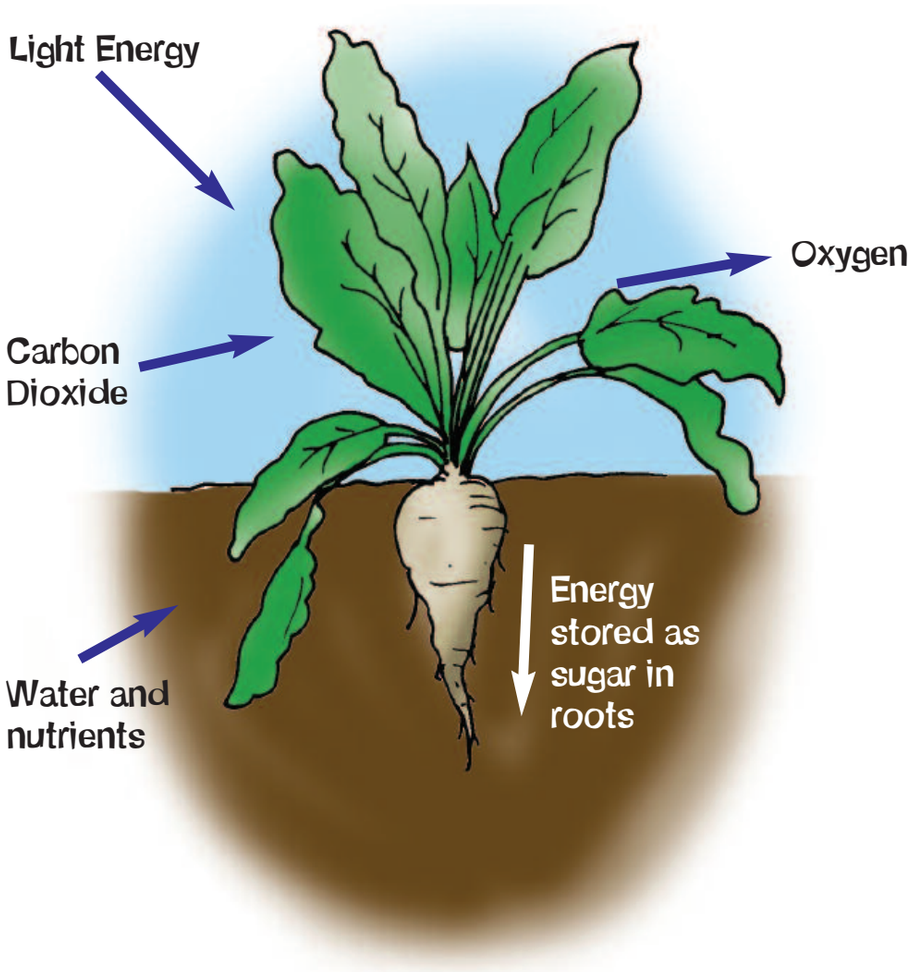
Sugar beets are a root crop. That means that they grow underground. They grow best in dry western states where they are irrigated. The sugar beet plant produces sugar in its leaves by a process called photosynthesis. In photosynthesis, the plant combines water with carbon dioxide from the air and energy from the sun to produce sugar. The sugar is stored inside the beet.

About 30% of the sugar we use comes from sugar beets. The other 70% of sugar is made from sugar cane. Sugar beet pulp and molasses are byproducts of sugar production. A by-product is a product made during the manufacture of something else. Sugar beet pulp is used as feed for cattle and sheep and in dog food. Molasses is used to make vinegar, in yeast and antibiotics (medicine).

A mature sugar beet can grow up to a foot long, and weigh 3-5 pounds. It can produce about 3 teaspoons of sugar. Sugar beets are tan on the outside and white inside. They taste sweet, as you may have guessed.

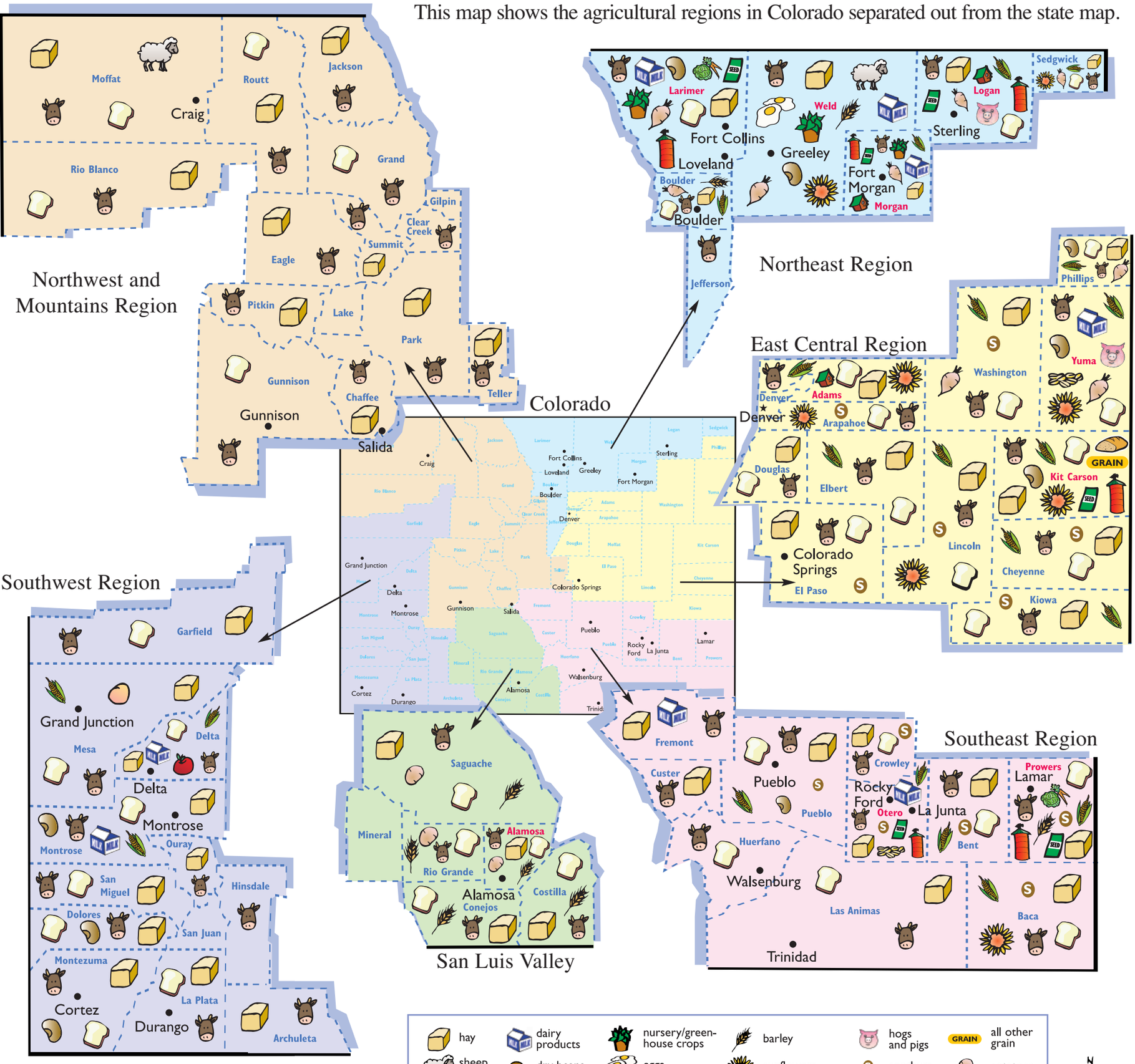
Sugar beet production in Colorado totaled 838,000 tons in 2004, making Colorado number eight in the nation.

HOW PHOTOSYNTHESIS WORKS



Where our Ag Products are Grown or Raised

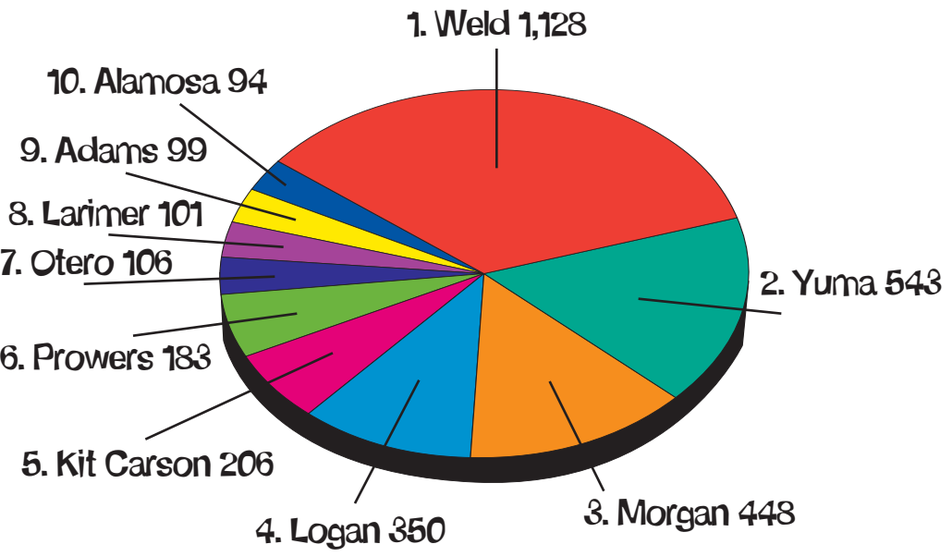
This map shows the agricultural regions in Colorado separated out from the state map.



Not every crop or type of livestock is shown on this map.
This is a simplified representation for educational purposes.

Top Ten Ag Counties in Colorado and Value of Ag Products Sold

(Dollars in Millions)



Using the map to the left and the chart above, answer the following questions.

1. In what region do you live? _____

_____

2. What are some of the agricultural products that come from your region? _____

_____

_____

_____

3. What counties have no agricultural products? _____

_____

4. What county sold the most agricultural products? _____

_____

Write a few sentences about your favorite agricultural products and why you enjoy them.

_____

_____

_____

_____

_____

_____

From A to Z

Colorado produces fresh, high quality products for millions of Colorado residents. In addition, our farmers and ranchers help to feed the world, exporting more than $840 million in products. Mexico, Japan, Canada and Korea receive the largest share of Colorado food products. Below are just a few items grown and raised here.

Colorado grows crops that start with every letter of the alphabet except one. What letter is missing in the list below?

_____

- Alfalfa Hay • Alligators • Anasazi Beans • Apples
- Apricots • Barley • Bell Peppers • Bison • Broccoli
- Cabbage • Canola • Cantaloupe • Carrots • Cashmere
- Cattle • Cauliflower • Cherries • Chickens
- Chili Peppers • Christmas Trees • Corn • Cucumbers
- Dry Beans • Eggs • Elk • Emu • Fish • Flowers • Garlic
- Goat Cheese • Grapes • Herbs • Hogs • Honey • Horses
- Jalapeno Peppers • Kabocha Squash • Kale • Lambs
- Lettuce • Milk • Milo • Mushrooms • Nectarines • Oats
- Okra • Onions • Ostrich • Peaches • Pears
- Pinto Beans • Plums • Potatoes • Pumpkins • Quinoa
- Rhubarb • Seed • Sheep • Sod • Sorghum • Spinach
- Squash • Striped Bass • Sugar Beets • Sunflowers
- Tilapia • Tomatoes • Trout • Ungulates • Vegetables
- Watermelons • Wheat • Wine • Wool • Xeriscape Plants
- Yaks • Zucchini • and more!

Get out your dictionary and find out what these products are and write the definition on the line:

ungulate _____

_____

milo _____

_____

quinoa _____

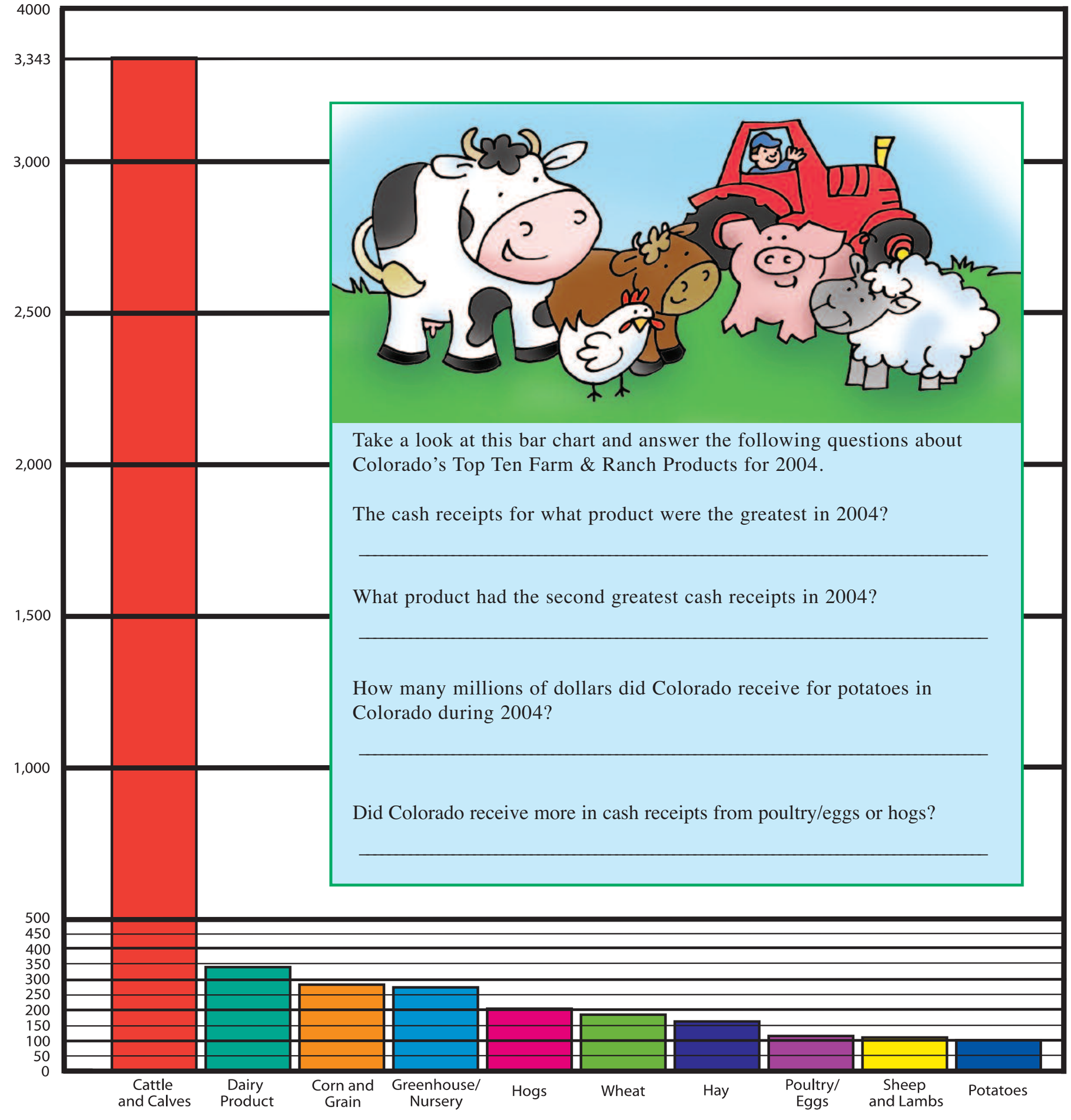
_____

tilapia _____

_____

Colorado's Top Ten Farm & Ranch Products for 2004

Cash Receipts in Millions



Take a look at this bar chart and answer the following questions about Colorado's Top Ten Farm & Ranch Products for 2004.

The cash receipts for what product were the greatest in 2004?

_____

What product had the second greatest cash receipts in 2004?

_____

How many millions of dollars did Colorado receive for potatoes in Colorado during 2004?

_____

Did Colorado receive more in cash receipts from poultry/eggs or hogs?

_____

Why buy Colorado Grown Products?

When you buy locally grown foods, you are getting high quality fresh foods, and you are helping maintain jobs and supporting family farms in Colorado. That's better for you and Colorado too!

Products that are grown or produced locally are fresher because they are harvested and delivered immediately to your local store. Because they are fresher, they keep more of their nutritional value and are better for you. They aren't stored and transported from out-of-state.

Farms and ranches are part of the history of Colorado. When you buy food that is grown locally, you help support Colorado's western heritage. But did you know that you are also helping our environment? When farms and ranches are profitable, they help maintain open space and wildlife habitat. In addition, we all know how the beauty of farms and ranches improves our landscape.

One way you can tell if something is grown or produced in Colorado is by looking for the "Colorado Proud" logo *(shown to the left)*. The state of Colorado has come up with this sunburst logo to help us identify local products. You can visit http://www.coloradoproud.com to learn more about the program.

Colorado Content Standards

This issue of the Colorado Reader helps you achieve the following Colorado Content Standards.

ECONOMICS
Standard II - Students understand how different economic systems impact decisions about the use of resources and the production and distribution of goods and services.

GEOGRAPHY
Standard I - Students know how to use and construct maps, globes and other geographic tools to locate and derive information about people, places, and environments.

Standard II - Students know the physical and human characteristics of places, and use this knowledge to define and study regions and their patterns of change.

Standard V - Students understand the effects of interactions between human and physical systems and changes in meaning, use, distribution, and importance of resources.

MATHEMATICS
Standard I - Students will utilize language, symbolism, and technology to develop number sense and to communicate those mathematical ideas.

READING AND WRITING
Standard I - Students read, listen to, and understand a variety of materials.

Standard II - Students write and speak for a variety of purposes and audiences.

Standard III - Students write using conventional grammar, usage, sentence structure, punctuation, capitalization, and spelling, and speak using conventional grammar, usage, sentence structure, and punctuation.

Standard IV - Students apply thinking skills to their reading, writing, speaking, listening, and viewing.

Standard V - Students read to locate, select, and make use of relevant information from a variety of media, reference, and technological sources.

SCIENCE
Standard III - Life Science: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment.

According to the article above, buying products that are grown or produced in Colorado is good for you and for Colorado. Write two reasons why on the lines below.

_____

_____

Are locally grown foods more nutritious or less nutritious? Circle your answer.

more nutritious less nutritious

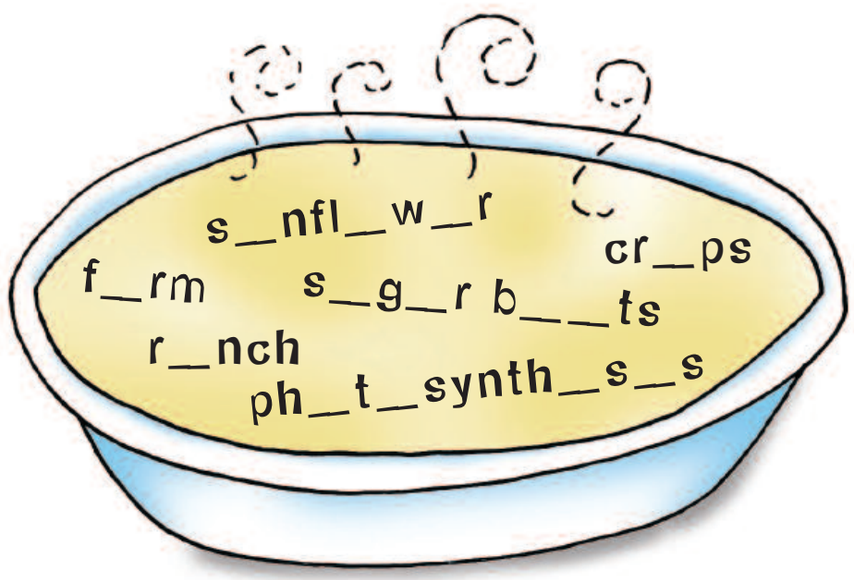
Explain your answer below:

_____

_____

_____

When Jeremy got to the lunch table, he noticed that all the vowels in his alphabet soup were missing. Write the missing vowels in the blanks to make words.



Help sort out these Colorado Agriculture Fun Facts

Help Samantha sort through the following numbered facts and put them in the correct file. Write the correct file name in the box that follows each fact.

1. Colorado producers harvested more than 1,000,000 acres of corn for grain in 2004. The average yield per acre was 135 bushels. ☐
2. Today Colorado boasts 540,000 grape vines on 650 acres of vines and 60 licensed wineries. Colorado's grape growing regions range in elevation from 4,000 to 7,000 feet and are among the highest vineyards in the world. ☐
3. Colorado's number one agricultural commodity, with 2.5 million head of cattle in the state, is cattle and calves. ☐
4. There are nearly 4 million layers (hens) in Colorado producing more than 1 billion eggs each year. ☐
5. Sweet corn is the second largest vegetable crop produced in the state in terms of value, with annual production of nearly 140 million pounds and a value of $16.3 million. ☐
6. Approximately 75.5 percent of the state's $5.5 billion in agricultural cash receipts are attributed to livestock. ☐
7. There are nearly 70,000 acres in the great San Luis Valley in southwestern Colorado dedicated to fall potato production. ☐
8. In 2004, Colorado's 102,000 milk cows produced more than 270 million gallons of milk. ☐
9. Colorado is well known for its production of pinto beans. The state produces an average of 128 million pounds of pinto beans each year. ☐
10. Colorado's four leading fruit crops are apples, peaches, pears and tart cherries, accounting for nearly $18.5 million annually. Colorado produced 28 million pounds of apples and 26 million pounds of peaches in 2004. ☐
11. Colorado's leading vegetable crop is onions, contributing nearly 50 percent of the state's total value from all vegetable crops. ☐
12. Apples are Colorado's largest fruit crop in terms of production. The high altitude at which they are grown makes them taste better, consistently winning taste tests in supermarkets and at trade shows. ☐
13. Colorado's sheep and lamb totals rank fifth in the nation. Colorado wool production is also fifth. ☐
14. Colorado's greenhouse vegetables are grown under 4.2 million square feet of glass. ☐